REQUEST FOR PROPOSAL

DATE ADVERTISED: January 13, 2004

RFP Title:	**Downtown Tunnel Closure Customer Research**
Requesting Dept./ Div.:	**King County Department of Transportation**
RFP Number:	**109-05RLD**
Due Date:	**February 8, 2005 ─ no later than 2:00 P.M.**
Buyer:	**Roy L. Dodman** roy.dodman@metrokc.gov, (206) 263-4266

<u>Pre-Proposal Conference:</u>

A conference to discuss questions related to this RFP shall be held at **10:00 a.m.** on **Thursday, January 27, 2005**, in Conference Room 8A on the 8th Floor of the Exchange Building, 821 Second Avenue, Seattle, WA 98104.

Sealed Proposals are hereby solicited and will **ONLY** be received by

King County Procurement Services Section
Exchange Building, 8th Floor
821 Second Avenue
Seattle, WA 98104-1598

Office Hours - 8:00 a.m. - 5:00 p.m.
Monday - Friday

SUBMITTERS MUST COMPLETE AND SIGN THE FORM BELOW (TYPE OR PRINT)

Company Name		
Address	City/State/Zip Code	
Signature	Authorized Representative / Title	
E-mail	Phone	Fax
Prime Proposer SEDB Certification number (if applicable - see Section II, Part 5 of this RFP)		

This Request for Proposal will be provided in alternative formats such as Braille, large print, audio cassette or computer disk for individuals with disabilities upon request.

If you received or downloaded this document in .pdf format, a MS Word copy may be obtained by contacting the buyer listed above. This MS Word document will be transmitted by e-mail.

Sealed proposals are hereby solicited and will be received only at the office of the King County Procurement Services Section at 821 Second Avenue, 8th Floor, Seattle, Washington, 98104 no later than 2 p.m. on the date noted above regarding *Downtown Tunnel Closure Customer Research* for the *King County Department Transportation.* These services shall be provided to King County in accordance with the following and the attached instructions, requirements, and specifications.

Submittal: King County requires the Proposer to sign and return *this entire Request for Proposal (RFP) document*. The Proposer shall provide *one unbound original* and *four (4) copies* of the proposal response, data or attachments offered, for *five (5) items* total. The original in both cases shall be noted or stamped "Original".

Pre-Proposal Conference: A conference to discuss questions related to this RFP shall be held at 10:00 a.m. on Thursday, January 27, 2005, in Conference Room 8A on the 8th Floor of the Exchange Building, 821 Second Avenue, Seattle, WA 98104. See link for driving instructions.

http://www.metrokc.gov/finance/procurement/find_us.asp

Questions: After the Pre-Proposal Conference, Proposers will be required to submit any further questions in writing prior to the close of business Thursday, January 27, 2005 in order for staff to prepare any response required to be answered by Addendum. Questions are best received and most quickly responded to when sent via e-mail directly to the following King County procurement personnel: *Primary* – Roy L. Dodman, Senior Buyer roy.dodman@metrokc.gov / *Secondary* – Cathy M. Betts, Buyer cathy.betts@metrokc.gov. Questions may also be sent via fax or mail to the address above.

SECTION I – GENERAL INFORMATION

A. King County is an Equal Opportunity Employer and does not discriminate against individuals or firms because of their race, color, creed, marital status, religion, age, sex, national origin, sexual orientation, or the presence of any mental, physical or sensory handicap in an otherwise qualified handicapped person.

B. All submitted proposals and evaluation materials become public information and may be reviewed by appointment by anyone requesting to do so *at the conclusion* of the evaluation, negotiation, and award process. This process is concluded when a signed contract is completed between King County and the selected Consultant. Please note that if an interested party requests copies of submitted documents or evaluation materials, a standard King County copying charge per page must be received prior to processing the copies. King County *will not* make available photocopies of pre-printed brochures, catalogs, tear sheets or audio-visual materials that are submitted as support documents with a proposal. Those materials will be available for review at King County Procurement.

C. No other distribution of proposals will be made by the Proposers prior to any public disclosure regarding the RFP, the proposal or any subsequent awards without written approval by King County. For this RFP all proposals received by King County shall remain valid for ninety (90) days from the date of submittal. All proposals received in response to this RFP will be retained.

D. Proposals shall be prepared simply and economically, providing a straightforward and concise but complete and detailed description of the Proposer's abilities to meet the requirements of this RFP. Fancy bindings, colored displays and promotional materials are not desired. Emphasis shall be on completeness of content.

E. King County reserves the right to reject any or all proposals that are deemed not responsive to its needs.

F. In the event it becomes necessary to revise any part of this RFP, addenda shall be created and posted at the King County Procurement web site. Addenda will also be conveyed to those potential submitters providing an accurate e-mail address. If desired, a hard copy of any addenda may be provided upon request.

G. King County is not liable for any cost incurred by the Proposer prior to issuing the contract.

H. A contract may be negotiated with the Proposer whose proposal would be most advantageous to King County in the opinion of the King County Department of Transportation, all factors considered. King County reserves the right to reject any or all proposals submitted.

I. It is proposed that if a selection is made as a result of this RFP, a contract with a fixed price/prices will be negotiated. Negotiations may be undertaken with the Proposer who is considered to be the most suitable for the work. This RFP is primarily designed to identify the most qualified firm. Price and schedule will be negotiated with the "first choice" Proposer; negotiations may be instituted with the second choice and subsequent Proposer until the project is canceled or an acceptable contract is executed.

J. This RFP shall be available for use by all King County Departments, Divisions and Agencies. If orders will be placed by the County's Transit Division, the Contractor will be required to sign and comply with the Federal Transit Administration's (FTA)'s required documentation.

K. The contents of the proposal of the selected Proposer shall become contractual obligations if a contract ensues. Failure of the Proposer to accept these obligations may result in cancellation of their selection.

L. A contract between the Consultant and King County shall include all documents mutually entered into specifically including the contract instrument, the RFP, and the response to the RFP. The contract must include, and be consistent with, the specifications and provisions stated in the RFP.

M. News releases pertaining to this RFP, the services, or the project to which it relates, shall not be made without prior approval by, and then only in coordination with, the King County Department of Executive Services.

N. King County Code 4.16.025 prohibits the acceptance of any proposal after the time and date specified on the Request for Proposal. There shall be no exceptions to this requirement.

O. King County agencies' staffs are prohibited from speaking with potential Proposers about the project during the solicitation.

Please direct all questions to:

Roy L. Dodman / Senior Buyer   or   Cathy M. Betts / Buyer
(206) 263-4266   (206) 263-4267
roy.dodman@metrokc.gov   cathy.betts@metrokc.gov

NOTE: Documents and other information is available in alternate formats for individuals with disabilities upon advance request by calling Mary Lou Allwine at 206-296-4210 or TTY711.

P. Protest Procedure - King County has a process in place for receiving protests based upon either proposals or contract awards. If you would like to receive or review a copy, please contact the Buyer named on the front page of this document or call Procurement Services at 206-684-1681.

Q. Term Service Requirement

While this RFP and the resulting contract is considered to be part of one project, the following condition will be included if any renewable, non-project specific work needs to be completed, as outlined in the following scope of services.

Contract Extension

The initial contract period will be for one (1) year from the start date of the contract. The term of the contract may be extended in one (1) year increments for three (3) additional one-year periods for a total contract duration of four (4) years, in accordance with the County's best interest and at the sole option of the County. Prices shall remain firm for the duration of the contract period. Reasonable price changes based on market conditions and price/cost analysis *may* be requested, if such escalations are based on changes in the U.S. Department of Labor, Bureau of Labor Statistics Consumer Price Index for All Urban Consumers ("CPI-U") for the Seattle-Tacoma-Bremerton Statistical Metropolitan Area for the preceding calendar year. You may obtain information about the CPI-U in general and the Seattle area in particular by visiting the United States Bureau of Labor Statistics web site at http://www.bls.gov/cpi/. In the event the CPI-U (or a successor or substitute index) is no longer published, a reliable government or other non-partisan index of inflation selected by the County shall be used to calculate any adjusted amounts. Requests for any such changes are to be made in writing to the King County Department of Transportation,

and approved by the County Executive or his/her designee. Any agreed-to change shall take effect at the time of the contract extension and shall remain in effect throughout the extension period. The parties hereto recognize that such changes could be increases or decreases in the prices; both parties are entitled to benefit from such price changes.

R. Electronic Commerce and Correspondence. King County is committed to reducing costs and facilitating quicker communication to the community by using electronic means to convey information. As such, most Invitations to Bid and Requests for Proposal, as well as related exhibits, appendices, and issued addenda can be found on the King County Internet Web Site, located at http://www.metrokc.gov/finance/procurement. Please refer to the "RFPs, RFQs & ITBs / New / Consultants" portion of the site (note: some documents or portions thereof may not be posted on the site. Please note any special messages regarding a particular solicitation). This information is posted at the Web Site as a *convenience* to the public, and is not intended to replace the King County process of formally requesting bid documents and providing the County with contact information for the potential proposer. Each proposer bears the responsibility to confirm the completeness and accuracy of all documents pertaining to a given solicitation, including the receipt of all issued addenda.

If a proposer downloads a document from the Web Site and does not contact the Procurement Office to obtain a hard copy, the proposer *must* use the "Feedback" (Envelope) button at the bottom of the Web page to convey the proposer's company name, contact name, mailing address, and phone/fax number to the County. Please note which document/documents were downloaded.

After proposals have been opened in public, the County will post a listing of the consultants submitting proposals at the King County Internet site. Please refer to the "RFPs, RFQs & ITBs / Awarded / Consultants" portion of the site for a listing, as well as a notification of a final award.

Unless otherwise requested, letters and other transmittals pertaining to this RFP will be issued to the e-mail address noted in our files, and after submittal, noted on the first page of this document. If other personnel should be contacted via e-mail in the evaluation of this proposal, or to be notified of evaluation results, please complete the information in the table below.

Contact Name	Title	Phone	E-mail address

S. Washington State Public Disclosure Act (RCW 42.17) requires public agencies in Washington to promptly make public records available for inspection and copying unless they fall within the specified exemptions contained in the Act, or are otherwise privileged.

T. Proposals submitted under this RFP shall be considered public documents and with limited exceptions proposals that are recommended for contract award will be available for inspection and copying by the public.

If a Proposer considers any portion of his/her proposal to be protected under the law, the Proposer shall clearly identify on the page(s) affected such words as "CONFIDENTIAL," PROPRIETARY" or BUSINESS SECRET." The Proposer shall also use the descriptions above in the following table to identify the effected page number(s) and location(s) of any material to be considered as confidential (attach additional sheets as necessary). If a request is made for disclosure of such portion, the County will determine whether the material should be made available under the law. If the material is not exempt from public disclosure law, the County will notify the Proposer of the request and allow the Proposer ten (10) days to take whatever action it deems necessary to protect its interests. If the Proposer fails or neglects to take such action within said period, the County will release the portion of the Proposal deemed subject to disclosure. By

submitting a Proposal, the Proposer assents to the procedure outlined in this paragraph and shall have no claim against the County on account of actions taken under such procedure.

Type of exemption	Beginning Page / Location	Ending Page / Location

U. Proposers are urged to use recycled/recyclable products and both sides of paper for printed and photocopied materials, whenever practicable, in preparing responses to this RFP.

V. Bid Identification Label: Please see the Bid Identification Label on the last page of this document.

SECTION II – PROJECT SPECIFICATIONS AND SCOPE OF WORK.

PART 1 - Background

The Downtown Seattle Transit Tunnel (DSTT) will close in 2005 for conversion to include light rail operation. The tunnel will open again for bus use in 2008 and bus and light rail use in 2009. During the years of retrofit, bus volumes on downtown surface streets, especially 3rd Avenue, Virginia Street, Olive Way, and Pike Street, will increase substantially, and construction disruptions will result in street closures and traffic rerouting. Downtown workers and shoppers will experience significant congestion and delays.

A multi-agency team representing Sound Transit, Community Transit, Metro Transit and the City of Seattle is working to mitigate disruptions and minimize negative impacts on traffic, parking, businesses, and pedestrian movement downtown. The Performance Monitoring and Maintenance subgroup of that team has been charged with identifying and tracking key performance measures and, based on results of their assessments, making recommendations for any further needed mitigation.

PART 2 - Scope of Work

A. Behavior and Perceptions

Downtown bus rider and auto-driver travel behavior and perceptions of satisfaction or dissatisfaction with aspects of the downtown experience are central elements of performance monitoring and assessment. Two types of evaluation activities are planned. These include more formal evaluation and informal feedback.

B.   Formal Evaluation

Formal evaluation of customer perceptions and travel behavior downtown includes a baseline study in Spring 2005, just before Tunnel closure, followed by additional surveys Spring 2006 and in 2008 after reopening to bus and rail service.

The current plan is to sample downtown bus riders, downtown parking facility users, metered parking users, and possibly downtown residents. Attachment A contains draft sampling plans for the 2005 formal evaluation effort.

Attachment B contains a map of the downtown project area. A map in greater resolution is available by contacting the Buyer listed on page 1 of this RFP.

Attachment C contains a fielding schedule sketch for each project element through 2008.

Sampling will occur mid-day/ afternoon peak times (3:00 p.m. – 6:00 p.m.) At least 1,000 downtown users altogether will participate in the survey, which will require 10 to 15 minutes to complete. Current plans are to have the consultant initially solicit participation from potential respondents for later follow-up by telephone both for the sample of transit users and the sample of drivers who park in lots. Those who park at meters will likely be solicited for participation by a windshield postcard with postage-paid return.

The more formal evaluation activities will occur in 2005, 2006, and 2008. Each year's survey will require a report of results by the consultant, including comparative analysis in years 2006 and 2008.

C. Informal Quick Feedback

Once after tunnel closure in 2005 and twice in 2006, informal, convenience-sample surveys of riders, drivers and other pedestrians downtown will be conducted to provide quick feedback on the effects of mitigation measures put into place.

Informal feedback will be solicited from downtown users in the Fall of 2005, and twice in 2006 at locations including bus stops, along key downtown streets affected by tunnel closure, and other locations to be determined. The consultant will solicit names and telephone numbers from downtown users and then telephone them for a short survey.

The survey will ask about what is working well or poorly in areas such as getting to and through downtown, crowding, the clarity of signage and information being provided about tunnel closure, changes to bus service and car routing to help mitigate impacts of closure activities, among other information. Respondents will also be asked for recommendations on specific mitigation efforts needing improvement.

The sample will cover mid-day/ (1:00 –2:00 p.m.) and PM peak times of day (3:00 – 6:00 p.m.) Each of these surveys will take about 10 minutes, and involve interviews with 200 – 300 participants. King County Metro may request additional interviews and questions at certain stops for one or more of the informal feedback surveys. If this work is requested, additional budget will be provided.

The results of these informal surveys will be provided as soon as available to decision-makers responsible for fine-tuning mitigation actions downtown during construction.

Metro Transit seeks full-service research firm[1] consultant help to carry out this customer research agenda over the project years 2005 – 2008. The contract will cover the year 2009 as well to allow for potential additional survey work after the tunnel opens for rail travel, although this is not currently anticipated. Additional budget will be provided in the event that additional work is required after 2008.

While the contract will cover the years 2005 – 2009, this Request for Proposals describes tasks for 2005 only. Future year tasks will be similar and will be authorized to the consultant by annual work orders at the sole discretion of the County.

D. 2005 Tasks

Task 1 – Preliminary Work

- Meet with the Project Manager to discuss the sampling plans and obtain needed information and data to sample riders, non-riders, and possibly residents of downtown Seattle; obtain Metro Research aprons and other needed material for the project.
- Finalize all methods with the Project Manager.
- Along with the Project Manager, meet with/contact key individuals/groups to discuss process, plans, ensure cooperation. These include: Parking garage operators selected for the sample, City of Seattle metered parking personnel, Metro Transit operations supervisors of routes selected for the sample, and the Downtown Seattle Association.
- Review draft questionnaires for the baseline and informal feedback surveys prepared by Metro staff and provide input. Finalize questionnaires, and format them for CATI.
- Baseline Customer Perceptions and Behavior Survey and Informal Interviews.

Task 2 – Training – Baseline Survey

- Provide draft briefing/training materials to the Project Manager
- After approval by the Project Manager, train and completely brief interviewers/fieldworkers on the project.
- Train supervisors. Provide at least one supervisor for every shift.

Task 3 – Conduct the Baseline Customer Perceptions and Behavior Survey

- Provide a complete set of draft methods for each survey component; if Internet response options are offered, provide a link to the site and make the survey available for the Project Manager to view.
- Pretest the survey questionnaire using a CATI system with at least 25 downtown users and conduct a similar pretest of any internet questionnaire. Metro Transit has already fielded a pilot survey by telephone in 2000 and an update to help refine questions in 2003, also by telephone.
- After approval by the Project Manager, field the survey

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[1] A full-service research firm is defined as one with in-house capabilities to: conduct CATI telephone surveys; develop and implement Internet surveys (if relevant); train, deploy and supervise field survey workers; conduct all analyses, prepare reports, and supply all required data files.

- Make at least 6 attempts at different times of the day and on different days to reach the intended respondent.
- Keep complete records and report weekly on sample disposition and response (or cooperation) rates by type of respondent (bus rider, garage/lot parker, on-street parker).

Task 4 – Analyze the Baseline Survey Data

- Clean, code, verify all data. Ensure accurate data entry of paper questionnaire responses via double entry methods or by use of data entry software
- Work with the Project Manager to develop coding categories -
- Work with the Project Manager to develop banner fields
- Provide top line results to the Project Manager as available.

Task 5 – Report and Other Deliverables – Baseline Survey

- After approval of report outline by the Project Manager, prepare a draft report of results
- After review by Project staff, submit 10 copies of a bound final report and one electronic copy along with a camera-ready copy.
- Submit one hard-copy and an electronic version of the study banners
- Submit complete information on sample disposition
- Submit the SPSS system file containing study data
- Submit one bound hard copy and an electronic version of the field service report including verbatim / comments.

Task 6 – Training –Informal Feedback Survey

- Prepare draft methods for collecting feedback from downtown users for approval by the Project Manager
- Provide draft briefing/training materials to the Project Manager
- After approval by the Project Manager, train and completely brief interviewers on the project

Task 7 – Conduct Informal Interviews

- Prepare the final questionnaire and obtain all needed materials to complete the survey work
- Solicit downtown user study participants
- Make at least 6 attempts at different times of the day and on different days to reach the intended respondent by telephone.
- Keep complete records and report on cooperation rates by type of respondent.

Task 8 – Analyze the Informal Interview Data

- Clean, code, verify, and analyze all data.
- Work with the Project Manager to specify banner points
- Provide topline results to the Project Manager as available
- Provide complete banners

Task 9 – Report and Other Deliverables – Informal Interviews

- After approval of report outline by the Project Manager, prepare a brief draft report of results
- After review by Project staff, submit 10 copies of a bound final report and one electronic copy
- Submit one hard-copy and an electronic version of the study banners
- Submit the SPSS system file containing study data

Task 10 (Optional Task) – Focus Groups - Focus groups with business owners in Downtown Seattle may be requested

- Recruit participants
- Prepare moderation guide

- Provide incentives
- Provide space
- Provide refreshments
- Provide written report summarizing focus group findings

PART 3 – Project Time Line (some dates are tentative and subject to change)

A. Procurement and Contracting Schedule

Proposals due	February 8, 2005 at 2:00 p.m.
Consultant selected	February 21, 2005
Notice to Proceed	March 9, 2005
Preliminary work	March 10 – March 24, 2005

B. Baseline Survey

Testing and training	March 28 – April 8 2005
Fielding	April 11 – June 3 2005
Analysis	June 6 – July 1 2005
Report Draft	July 5 – July 29 2005
Review Period	August 1 – August 12 2005
Final Draft	September 9 2005
All deliverables	September 9 2005

C. Informal Interviews

Fielding	October 10 – November 18, 2005
Analysis	Nov. 21 –December 16, 2005
Draft Report	January 13, 2006
Final Report	January 30, 2006

PART 4 – Budget

The total available budget for the project in years 2005 – 2008, including any additional analyses, is approximately $330,000. The consultant budget for 2005 work is not to exceed $90,000. Additional budget may be available for expanded informal feedback surveys or focus groups.   Please itemize these tasks as optional tasks listing them separately from the estimate for tasks 1 through 9.

A. Evaluation Criteria

Proposals will be evaluated on the following criteria:

- Experience conducting customer/user research in the transit/public transportation industry *(10 points)*
- Demonstration of a clear understanding of the research requirements/quality of the proposal *(20 points)*
- Quality of interviewer training and data collection procedures and processes *(20 points)*
- Demonstration of analytic capabilities to carry out the research *(10 points)*
- Past performance in conducting high quality, timely, and responsive research. (Please provide three references for past projects conducted by your firm that directly relate to similar customer/user research) *(10 points)*
- Proposed cost to complete the work (2005) *(10 points).*

- SEDB participation *(10 Points – see Part 5 below)*

B. Interviews (optional)

If an award is not made based on the written proposals alone, interviews may be conducted with the top-ranked proposers. If interviews are conducted, they will be worth a total of *40 points*. Final award would then be based on the overall total of the written evaluation and oral interview points.

PART 5 – King County Contracting Opportunities Program

The purpose of the King County Contracting Opportunities Program is to maximize the participation of Small Economically Disadvantaged Businesses (SEDB) through the use of rating points in the award of King County competitively bid contracts for the acquisition of technical services. The program is open to all firms that are certified as an SEDB by King County's Business Development and Contract Compliance Office.

A "Small Economically Disadvantaged Business" (SEDB) means that a business and the person or persons who own and control it are in a financial condition, which puts the business at a substantial disadvantage in attempting to compete for public contracts. The relevant financial condition for eligibility under the Program is set at fifty percent (50%) of the Federal Small Business Administration (SBA) small business size standards using the North American Industrial Classification System (NAICS), and an Owners' Personal Net Worth less than $750K dollars.

A "Certified Firm" means a business that has applied for participation in King County's Contracting Opportunities Program, and has been certified as an SEDB by the King County Business Development and Contract Compliance (BDCC) office. Information about becoming a Certified Firm, as well as a list of Certified Firms, may be obtained by visiting the King County's Contracting Opportunities Program Website address: http://www.metrokc.gov/exec/bred/bdcc/prog/kccontractopp.htm or contacting the BDCC office at (206) 205-0711.

In the evaluation of proposals, ten points will be allotted for SEDB participation. King County will count only the participation of SEDBs that are certified by King County at the date and time of proposal submittal. After tabulation of the selection criteria points of all prime submitters, twenty (20) points shall be added to the score of all proposals that meet at least one of the two following sub-criterion:

1. If the Prime submitter is a SEDB firm that anticipates performing work for the entire contract unassisted and includes the SEDB certification number on page one of this submittal.

2. If the Prime submitter is not an SEDB but will use SEDBs for at least 5% of the total contract labor hours in the work to be performed in this contract, and who complete the following table and include it in their proposal submission:

SEDB Certification Number	Sub-Consultant Name	Contact Name / Phone	Work to be performed	Percentage of Total Hours

SEDB participation shall be counted only for SEDBs performing a commercially useful function according to custom and practice in the industry. A commercially useful function is defined as a specific scope of work for which the SEDB has the management and technical expertise to perform using its own workforce and resources.

SECTION III - NONDISCRIMINATION AND AFFIRMATIVE ACTION

If a contract is awarded from this Request for Proposal, it will contain the following contract language:

PART 1:   NON-DISCRIMINATION

A. King County Code Chapters 12.16, 12.17 and 12.18 are incorporated by reference as if fully set forth herein and such requirements apply to this Contract; provided however, that no specific levels of utilization of minorities and women in the workforce of the Consultant shall be required, and the Consultant is not required to grant any preferential treatment on the basis of race, sex, color, ethnicity or national origin in its employment practices; and provided further that, notwithstanding the foregoing, any affirmative action requirements set forth in any federal regulations, statutes or rules included or referenced in the contract documents shall continue to apply.

B. During the performance of this Contract, neither the Consultant nor any party subcontracting under the authority of this Contract shall discriminate nor tolerate harassment on the basis of race, color, sex, religion, nationality, creed, marital status, sexual orientation, age, or the presence of any sensory, mental, or physical disability in the employment or application for employment or in the administration or delivery of services or any other benefits under this Contract.

C. The Consultant shall, prior to the commencement of the work and during the term of this Contract, furnish the County, upon request and on such forms as may be provided by the County, a report of the affirmative action taken by the Consultant in implementing the terms of this section. The Consultant will permit access by the County to the Consultant's records of employment, employment advertisements, application forms, other pertinent data and records related to this Contract for the purpose of monitoring and investigation to determine compliance with these requirements.

D. The Consultant shall implement and carry out the obligations contained in its Affidavit and Certificate of Compliance regarding equal employment opportunity.   Failure to implement and carry out such obligations in good faith may be considered by the County as a material breach of this Contract and grounds for withholding payment and/or termination of the Contract and dismissal of the Consultant.

E. The Consultant shall comply fully with all applicable federal, state and local laws, ordinances, executive orders and regulations that prohibit such discrimination. These laws include, but are not limited to, RCW Chapter 49.60 and Titles VI and VII of the Civil Rights Act of 1964.

F. During the performance of this Contract, neither the Consultant nor any party subcontracting under the authority of this Contract shall engage in unfair employment practices. It is an unfair employment practice for any:

1. Employer or labor organization to discriminate against any person with respect to referral, hiring, tenure, promotion, terms, conditions, wages or other privileges of employment;

2. Employment agency or labor organization to discriminate against any person with respect to membership rights and privileges, admission to or participation in any guidance program, apprenticeship training program, or other occupational training program;

3. Employer, employment agency, or labor organization to print, circulate, or cause to be printed, published or circulated, any statement, advertisement, or publication relating to employment or membership, or to use any form of application therefor, which indicates any discrimination unless based upon a bona fide occupation qualification;

4. Employment agency to discriminate against any person with respect to any reference for employment or assignment to a particular job classification;

5. Employer, employment agency or a labor organization to retaliate against any person because this person has opposed any practice forbidden by KCC Chapter 12.18 or because that person has

made a charge, testified or assisted in any manner in any investigation, proceeding or hearing initiated under the provisions of KCC Chapter 12.18;

6. Publisher, firm, corporation, organization or association printing, publishing or circulating any newspaper, magazine or other written publication to print or cause to be printed or circulated any advertisement with knowledge that the same is in violation of KCC Chapter 12.18.030C., or to segregate and separately designate advertisements as applying only to men and women unless such discrimination is reasonably necessary to the normal operation of the particular business, enterprise or employment, unless based upon a bona fide occupational qualification; and/or

7. Employer to prohibit any person from speaking in a language other than English in the workplace unless:

    a. The employer can show that requiring that employees speak English at certain *times* is justified by business necessity, and

    b. The employer informs employees of the requirement and the consequences of violating the rule.

PART 2: REQUIRED SUBMITTALS

A. All Consultants entering into a contract or agreement with King County valued at $25,000 or more shall, after the proposer receives written notice of selection, submit the following:

1. A Personnel Inventory Report on the form provided by the County.

2. An Affidavit of Compliance demonstrating the Consultant's commitment to comply with the provisions of KCC Chapter 12.16.

3. A Sworn Statement of Compliance with 12.16 from any labor union or employee referral agency that refers workers or employees or provides or supervises training programs from whom the Consultant obtains employees.

B. The County will not execute any agreement or contract without prior receipt of fully executed forms listed in subparagraph A above.

C. Assistance with the requirements of this Section and copies of Chapters 12.16, 12.17 and 12.18 are available from the Business Development & Contract Compliance (BDCC) Section, phone (206) 205-0700.

PART 3: NONDISCRIMINATION IN SUBCONTRACTING PRACTICES

A. <u>Compliance with Initiative 200</u>. In accordance with the provisions of Washington Initiative 200, no County Minority and Women Business (M/WBE) utilization requirements shall apply to this Contract. No minimum level of M/WBE sub-consultant participation or purchase from M/WBE certified vendors is required and no preference will be given by the County to a bidder or Proposer for their M/WBE utilization or M/WBE status. Provided, however, that any affirmative action requirements set forth in any federal regulations or statutes included or referenced in the Contract documents will continue to apply.

B. <u>Non-Discrimination.</u> During the term of this Contract, the Consultant shall not create barriers to open and fair opportunities to participate in County contracts or to obtain or compete for contracts and subcontracts as sources of supplies, equipment, construction and services.   In considering offers from and doing business with sub-consultants and suppliers, the Consultant shall not discriminate against any person on the basis of race, color, creed, religion, sex, age, nationality, marital status, sexual orientation or the presence of any mental or physical disability in an otherwise qualified disabled person.

During the performance of work performed under any Agreement resulting from this RFP, neither the consultant nor any party subcontracting under the authority of the agreement shall discriminate or engage in unfair contracting practices prohibited by K.C.C. 12.17.

C. Record-Keeping Requirements. The Consultant shall maintain, for at least 6 years after completion of all work under this contract, records and information necessary to document its level of utilization of M/WBEs and other businesses as sub-consultants and suppliers in this contract and in its overall public and private business activities for the same period. The Consultant shall also maintain, for at least 6 years after completion of all work under this contract, all written quotes, bids, estimates or proposals submitted to the Consultant by all businesses seeking to participate on this Contract. Consultant shall make such documents available to the County for inspection and copying upon request. If this contract involves federal funds, Consultant shall comply with all record keeping requirements set forth in any federal rules, regulations or statutes included or referenced in the contract documents.

D. Open Competitive Opportunities. King County encourages the utilization of minority owned businesses ("MBEs") and women-owned businesses ("WBEs")(collectively, "M/WBEs") in County contracts. The County encourages the following practices to promote open competitive opportunities for small businesses including M/WBEs:

1. Attending a pre-bid or pre-solicitation conference, if scheduled by the County, to provide project information and to inform M/WBEs and other firms of contracting and subcontracting opportunities.

2. Placing all qualified small businesses attempting to do business in King County, including M/WBEs, on solicitation lists, and providing written notice of subcontracting opportunities to M/WBEs and all other small businesses capable of performing the work, including without limitation all businesses on any list provided by the County, in sufficient time to allow such businesses to respond to the written solicitations.

3. Breaking down total requirements into smaller tasks or quantities, where economically feasible, in order to permit maximum participation by small businesses including M/WBEs.

4. Establishing delivery schedules, where the requirements of this contract permit, that encourage participation by small businesses, including M/WBEs.

5. Providing small businesses including M/WBEs that express interest with adequate and timely information about plans, specifications, and requirements of the contract.

6. Utilizing the services of available community organizations, Consultant groups, local assistance offices, the County, and other organizations that provide assistance in the recruitment and placement of small businesses including M/WBEs.

Further, the County encourages small businesses, including M/WBEs, to participate in the following practices to promote open competitive opportunities:

1. Attending a pre-bid or pre-solicitation conference, if scheduled by the County, to receive project information and to inform prime bidders/proposers of contracting and subcontracting capabilities.

2. Requesting placement on solicitation lists, and receipt of written notice of subcontracting opportunities.

3. Utilizing the services of available community organizations, Consultant groups, local assistance offices, the County, and other organizations that provide assistance in the recruitment and placement of small businesses and M/WBEs.

E. Sanctions for Violations. Any violation of the mandatory requirements of the provisions of this Section shall be a material breach of contract for which the Consultant may be subject to damages and sanctions provided for by contract and by applicable law.

PART 4:   REQUIREMENTS DURING WORK

A. Site Visits

King County may at any time visit the site of the work and the Consultant's office to review records related to actual utilization of and payments to subcontracting firms. The Consultant shall maintain

sufficient records necessary to enable King County to review utilization of subcontracting firms. The Consultant shall provide every assistance requested by King County during such visits.

PART 5: COMPLIANCE WITH SECTION 504 OF THE REHABILITATION ACT OF 1973, AS AMENDED AND THE AMERICANS WITH DISABILITIES ACT OF 1990

The Consultant shall complete a Disability Self-Evaluation Questionnaire for all programs and services offered by the Consultant (including any services not subject to this Contract) and shall evaluate its services, programs and employment practices for compliance with Section 504 of the Rehabilitation Act of 1973, as amended ("504"), and the Americans with Disabilities Act of 1990 ("ADA"). The Consultant shall complete a 504/ADA Disability Assurance of Compliance prior to execution of a contract.

SECTION IV - GENERAL CONTRACT REQUIREMENTS

PART 1:   TERMINATION CLAUSES

A. This Contract may be terminated by the County without cause, in whole or in part, upon providing the Consultant ten (10) calendar days' advance written notice of the termination.

   If the Contract is terminated pursuant to this Section IV, paragraph A: (1) the County will be liable only for payment in accordance with the terms of this Contract for services rendered prior to the effective date of termination; and (2) the Consultant shall be released from any obligation to provide further services pursuant to the Contract.

B. The County may terminate this Contract, in whole or in part, upon five (5) calendar days' advance written notice in the event: (1) the Consultant materially breaches any duty, obligation, or services required pursuant to this Contract, or (2) the duties, obligations, or services required herein become impossible, illegal, or not feasible.

   If the Contract is terminated by the County pursuant to this Subsection IV(B) (1), the Consultant shall be liable for damages, including any additional costs of procurement of similar services from another source.

   If the termination results from acts or omissions of the Consultant, including but not limited to misappropriation, nonperformance of required services or fiscal mismanagement, the Consultant shall return to the County immediately any funds, misappropriated or unexpended, which have been paid to the Consultant by the County.

C. If expected or actual funding is withdrawn, reduced or limited in any way prior to the termination date set forth above in Section II or in any amendment hereto, the County may, upon written notice to the Consultant, immediately terminate this Contract in whole or in part.

   If the Contract is terminated pursuant to this Section IV, paragraph C: (1) the County will be liable only for payment in accordance with the terms of this Contract for services rendered prior to the effective date of termination; and (2) the Consultant shall be released from any obligation to provide further services pursuant to the Contract.

   Funding under this Contract beyond the current appropriation year is conditional upon appropriation by the County Council of sufficient funds to support the activities described in this Contract. Should such an appropriation not be approved, this contract will terminate at the close of the current appropriation year.

D. Nothing herein shall limit, waive, or extinguish any right or remedy provided by this Contract or law that either party may have in the event that the obligations, terms and conditions set forth in this Contract are breached by the other party.

PART 2: INDEMNIFICATION AND HOLD HARMLESS

A. In providing services under this Contract, the Consultant is an independent contractor, and neither the Consultant nor its officers, agents or employees are an employee of the County for any purpose. The Consultant shall be responsible for all federal and/or state tax, industrial insurance, and Social Security liability that may result from the performance of and compensation for these services and shall make no claim of career service or civil service rights which may accrue to a County employee under state or local law.

The County assumes no responsibility for the payment of any compensation, wages, benefits or taxes to, or on behalf of, the Consultant, its employees or others by reason of this Contract. The Consultant shall protect, indemnify and save harmless the County, its officers, agents and employees from and against any and all claims, costs and/or losses whatsoever occurring or resulting from 1) the Consultant's failure to pay any such compensation, wages, benefits or taxes; and 2) the supplying to the Consultant of work, services, materials and/or supplies by Consultant employees or other suppliers in connection with the performance of this Contract.

B. The Consultant further agrees that it is financially responsible for and shall repay the County all indicated amounts following an audit exception which occurs due to the negligence, intentional acts or failure for any reason to comply with the terms of this Contract by the Consultant, its officers, employees, agents and/or representatives. This duty to repay the County shall not be diminished or extinguished by the prior termination of the Contract pursuant to the Duration of Contract, or the Termination section.

C. The Consultant shall protect, defend, indemnify, and save harmless the County, [and the State of Washington (when any funds for this Contract are provided by the State of Washington)] their officers, employees, and agents from any and all costs, claims, judgments, and/or awards of damages, arising out of or in any way resulting from the negligent acts or omissions of the Consultant, its officers, employees, and/or agents. The Consultant agrees that its obligations under this subparagraph extend to any claim, demand and/or cause of action brought by or on behalf of any of its employees or agents. For this purpose, the Consultant by mutual negotiation, hereby waives, as respects the County only, any immunity that would otherwise be available against such claims under the Industrial Insurance provisions of Title 51 RCW. In the event that County incurs attorney fees and/or costs in the defense of claims, for damages within the scope of this section, such fees and costs shall be recoverable from the Consultant. In addition King County shall be entitled to recover from the Consultant fees, and costs incurred to enforce the provisions of this section.

Claims shall include, but not be limited to, assertions that the use or transfer of any software, book, document, report, film, tape, or sound reproduction or material of any kind, delivered hereunder, constitutes an infringement of any copyright, patent, trademark, trade name, or otherwise results in unfair trade practice.

Nothing contained within this provision shall affect and/or alter the application of any other provision contained within this agreement.

PART 3: INSURANCE

The selected Consultant shall furnish General Liability in the amount of $1,000,000 combined single limit; $2,000,000 aggregate. In addition, evidence of Workers' Compensation and Stop-Gap Employer's Liability for a limit of $1,000,000 shall be provided. Further, the selected consultant shall furnish Automobile Liability with a limit of $1,000,000.

Such policy/policies shall endorse King County, City of Seattle, Sound Transit and all appointed and elected officials, officers, agents and employees as additional insureds.

King County reserves the right to approve deductible/self-insured retention levels and the acceptability of insurers.

PART 4: CORRECTIVE ACTION

If the County determines that a breach of contract has occurred, that is the Consultant has failed to comply with any terms or conditions of this Contract or the Consultant has failed to provide in any manner the work or services agreed to herein, and if the County deems said breach to warrant corrective action, the following sequential procedure will apply:

A. The County will notify the Consultant in writing of the nature of the breach;

B. The Consultant shall respond in writing within three (3) working days of its receipt of such notification, which response shall indicate the steps being taken to correct the specified deficiencies. The corrective action plan shall specify the proposed completion date for bringing the Contract into compliance, which date shall not be more than ten (10) days from the date of the Consultant's response; unless the County, at its sole discretion, specifies in writing an extension in the number of days to complete the corrective actions;

C. The County will notify the Consultant in writing of the County's determination as to the sufficiency of the Consultant's corrective action plan. The determination of sufficiency of the Consultant's corrective plan shall be at the sole discretion of the County;

D. In the event that the Consultant does not respond within the appropriate time with a corrective action plan, or the Consultant's corrective action plan is determined by the County to be insufficient, the County may commence termination of this Contract in whole or in part pursuant to Section IV.B;

E. In addition, the County may withhold any payment owed the Consultant or prohibit the Consultant from incurring additional obligations of funds until the County is satisfied that corrective action has been taken or completed; and

F. Nothing herein shall be deemed to affect or waive any rights the parties may have pursuant to Section IV, Termination Clauses, Subsections A, B, C, and D.

PART 5: ASSIGNMENT/SUBCONTRACTING

A. The Consultant shall not assign or subcontract any portion of this Contract or transfer or assign any claim arising pursuant to this Contract without the written consent of the County. Said consent must be sought in writing by the Consultant not less than fifteen (15) calendar days prior to the date of any proposed assignment.

B. "Subcontract" shall mean any agreement between the Consultant and a Subcontractor or between Subcontractors that is based on this Contract, provided that the term "subcontract" does not include the purchase of (i) support services not related to the subject matter of this contract, or (ii) supplies.

SECTION V - ADDITIONAL INFORMATION & REQUIREMENTS

A. Non-Discrimination in Benefits to employees with Domestic Partners

King County's Equal Benefits (EB) Ordinance 14823 states that to be eligible for award of contracts at a cost of $25,000.00 or more, firms must not discriminate in the provisions of employee benefits between employees with spouses, and employees with domestic partners. The successful Contractor, bidder or proposer shall be required to complete a Worksheet and Declaration form. Compliance with Ordinance 14823 is a mandatory condition for execution of a contract. The EB Compliance forms, and Ordinance 14823 are available online at: http://www.metrokc.gov/financé/procurement/forms.asp

B. Disclosure – Conflict of Interest

King County Code Chapter 3.04 is incorporated by reference as if fully set forth herein and the Consultant agrees to abide by all the conditions of said Chapter. Failure by the Consultant to comply with any requirements of this Chapter shall be a material breach of contract.

1. The Consultant covenants that no officer, employee, or agent of the County who exercises any functions or responsibilities in connection with the planning and implementation of the scope of services funded herein, or any other person who presently exercises any functions or responsibilities in connection with the planning and implementation of the scope of services funded herein shall have any personal financial interest, direct or indirect, in this Contract. The Consultant shall take appropriate steps to assure compliance with this provision.

2. If the Consultant violates the provisions of Section V (1) or does not disclose other interest required to be disclosed pursuant to King County Code Section 3.04.120, as amended, the County will not be liable for payment of services rendered pursuant to this Contract. Violation of this Section shall constitute a substantial breach of this Contract and grounds for termination pursuant to Section IV (B) above as well as any other right or remedy provided in this Contract or law.

3. The King County Board of Ethics maintains a website that provides information regarding King County ethics requirements. To review specific areas of the Code of Ethics that relate to contractors and vendors, follow this path: http://www.metrokc.gov/ethics/, and access 1) The Code of Ethics, "Employee Code of Ethics 3.04", and 2) Advice and Guidance "Doing Business with Contractors, Vendors, Clients and Customers". Under "Employee Code of Ethics 3.04", there are two areas of the code that speak specifically to contractors: 3.04.060 B1 (attempting to secure preferential treatment) and 3.04.120 (disclosure of interests by consultants requirement). There are other sections under conflict of interest, 3.04.030 that are directed to employees and govern their relationships with contractors.

C. Recycled/Recyclable Products

It is the policy of King County to use recycled materials to the maximum extent practicable (King County Code Chapter 10.16). Consultants able to supply products containing recycled materials that meet performance requirements are encouraged to offer them in bids and proposals and to use them wherever possible in fulfillment of contracts.

The Consultant shall use recycled paper for the production of all printed and photocopied documents related to the fulfillment of this Contract and shall ensure that, whenever possible, the cover page of each document printed on recycled paper bears an imprint identifying it as recycled paper. If the cost of recycled paper is more than fifteen percent higher than the cost of non-recycled paper, the Consultant may notify the Contract Administrator, who may waive the recycled paper requirement. The Consultant shall use both sides of paper sheets for copying and printing and shall use recycled/recyclable products wherever practical in the fulfillment of this Contract.

D. Proprietary Rights

The parties to this Contract hereby mutually agree that if any patentable or copyrightable material or article should result from the work described herein, all rights accruing from such material or article shall be the sole property of the County. The foregoing shall not apply to existing training materials, consulting aids, check lists and other materials and documents of the Consultant which are modified for use in the performance of this Contract.

E. Supported Employment Program

King County encourages the creation of supported employment programs for developmentally and/or severely disabled individuals. The County itself has such a program and is actively seeking to do business with those contractors and consultants that share this employment approach. If your firm has such a program, or intends to develop such a program during the life of this contract, please submit documentation supporting this claim with your bid/proposal/qualifications. If you have questions, or need additional information, please contact Ray Jensen, Community & Human Services, Developmental Disabilities Division, (206) 296-5268 or the County's Business Development and Contract Compliance Section at (206) 205-0700.

SECTION VI - MAINTENANCE OF RECORDS/AUDITS

A. The Consultant shall maintain, and shall require any sub-consultant to maintain, accounts and records, including personnel, property, financial and programmatic records and other such records as may be deemed necessary by the County to ensure proper accounting for all project funds and compliance with this Contract. All such records shall sufficiently and properly reflect all direct and indirect costs of any nature expended and services provided in the performance of this Contract. The Consultant shall make such documents available to the County for inspection, copying, and auditing upon request.

B. All records referenced in subsection (A) shall be maintained for a period of six (6) years after completion of work or termination hereof unless permission to destroy them is granted by the Office of the Archivist in accordance with RCW Chapter 40.14, or unless a longer retention period is required by law.

C. The Consultant shall provide access to its facilities, including those of any sub-consultant, to the County, the state and/or federal agencies or officials at all reasonable times in order to monitor and evaluate the services provided under this Contract. The County will give advance notice to the Consultant in the case of fiscal audits to be conducted by the County.

D. The Consultant agrees to cooperate with the County or its designee in the evaluation of services provided under this Contract and to make available all information reasonably required by any such evaluation process. The results and records of said evaluation shall be maintained and disclosed in accordance with RCW Chapter 42.17.

E. If the Consultant received a total of $500,000.00 or more in federal financial assistance during its fiscal year from the County, and is a non-profit organization or institution of higher learning or a hospital affiliated with an institution of higher learning, and is, under this Contract, carrying out or administering a program or portion of a program, it shall have an independent audit conducted of its financial statement and condition, which shall comply with the requirements of GAAS (generally accepted auditing standards), GAO's Standards for Audits of Governmental Organizations, Programs, Activities, and Functions and OMB Circulars A-133 and A-128, as amended and as applicable. Consultants receiving federal funds from more than one County Department or Division shall be responsible for determining of the combined financial assistance is equal or greater than $500,000.00. The Consultant shall provide one copy of the audit report to each County division providing federal financial assistance to the Consultant no later than six (6) months subsequent to the end of the Consultant's fiscal year.

SECTION VII – REQUIRED FORMS

The following completed forms will be required from the selected contractor, prior to contract award:

A. King County Personnel Inventory Report
B. Affidavit and Certificate of Compliance with King County Code 12.16
C. Statement of Compliance - Union or Employee Referral Agency Statement (if applicable)
D. King County Code 3.04.120 and Consultant Disclosure Form
E. 504/ADA Disability Assurance of Compliance and Corrective Action Plan
F. Equal Benefits Compliance Declaration Form

Copies of these forms are available by contacting the King County Procurement and Contract Services Division. They are available in paper form, or may be obtained via e-mail. Please contact Cathy Betts at 206-263-4267 or Roy L. Dodman at 206-263-4266, or by sending an e-mailed request to cathy.betts@metrokc.gov or roy.dodman@metrokc.gov.

SECTION VIII – BID PROPOSAL CHECKLIST

A. One (1) signed copy of entire RFP package.
B. One (1) signed copy of any Addendum that was issued. (If it has signature box at bottom of first page, it must be returned.)
C. One (1) unbound copy of proposal response marked "Original."
D. Four (4) copies of proposal response.
E. Complete the Bid Identification Label below (or reasonable facsimile) and attach it to a prominent place on the exterior of the submission envelope, box, etc.

U R G E N T – SEALED BID ENCLOSED
Do Not Delay – Deliver Immediately

King County

King County Procurement &
Contract Services Section
Exchange Building, 8th Floor
821 2nd Ave, EXC-FI-0862
Seattle, WA 98104-1598

Bid No.   **RFP 109-05RLD**

Bid Title   **Downtown Tunnel Closure Customer Research**

Due Date

Vendor

Attachment A

SEATTLE CUSTOMER SURVEY

SAMPLING METHODOLOGY

FOR METRO

January 13, 2005

Attachment A - Table of Contents

INTRODUCTION

This report describes a methodology for measuring opinions of individuals in downtown Seattle by means of two-stage cluster sampling.

The purpose of the research is to measure opinions on transportation and other issues among individuals who visit downtown Seattle.

Sampling Frames

The primary challenge of such a survey is obtaining a random sample of the population. There is no single sampling frame (list) of individuals from which a sample could be easily selected nor a feasible method to identify a simple random sample of individuals of the entire group.

The population of individuals visiting downtown Seattle can be subdivided into sub-populations by mode of transportation (*transportation strata*): 1) individuals arriving by bus, 2) individuals arriving by car who park in one of the parking lots, 3) individuals arriving by car who park on the street, and 4) individuals arriving by all other means. The latter category is small relative to the others and can be ignored.

While there is no sampling frame of individuals, there are sampling frames available for groups of individuals or "clusters". For buses, there is a complete listing of stops in downtown Seattle. Each stop is a cluster. For individuals who park in lots, there is a complete listing of lots in downtown Seattle. Each parking lot is a cluster. For people parking on the street, there is a complete listing of parking meters by block. Each block is a cluster.

These sampling frames of clusters provide a basis for random sampling of the population using the technique known as "cluster sampling." This is a two- stage process. First a cluster is sampled at random. Then individuals within a cluster are sampled.

Defining Unambiguous Frames

One requirement of the sampling frame is that each element be listed only once. If this were not the case, some individuals would be given a greater or lesser probability of being selected. The transportation modes are not mutually exclusive. For example, an individual riding a bus may sometimes drive a car. This can be eliminated by creating rules to identify individuals uniquely with one and only one transportation stratum. I propose the following simple rules:

1) Individuals who ride the bus (define the frequency) are assigned to the bus stratum.
2) Individuals who park in lots (define the frequency) and are not assigned to the bus stratum are assigned to the parking lot stratum.
3) Individuals who park on the street and are not assigned to either the bus or parking lot strata, are assigned to the parking meter stratum.

Relevant questions on transportation modes need to be included in the respective survey instruments. Those questions would be used for screening potential respondents. The frequencies of bus riding and parking lot use that are used to define the respective strata are arbitrary as far as assigning individuals uniquely to strata. They should be chosen on a basis that makes sense to Metro but one that is clear cut (e.g., "at least once a week" would be OK but "I usually ride the bus" would not be)

Cluster Size

In considering different options for the selection of clusters, we looked at the variation in cluster size.

Bus Stratum

For the bus stratum the measure of cluster size will be based on Metro's automated counts (*Ons* data). The sum of the counts over a period of time provides a measure of the number of individuals boarding the buses at a given stop during the time interval. The counts are available for different times of the day.

A frequency diagram of the variable TOTPERS, the count of the total persons boarding between 4pm and 6pm for all 173 stops, is shown in the following figure.

Std. Dev = 1338.67

Mean = 1013.0

N = 173.00
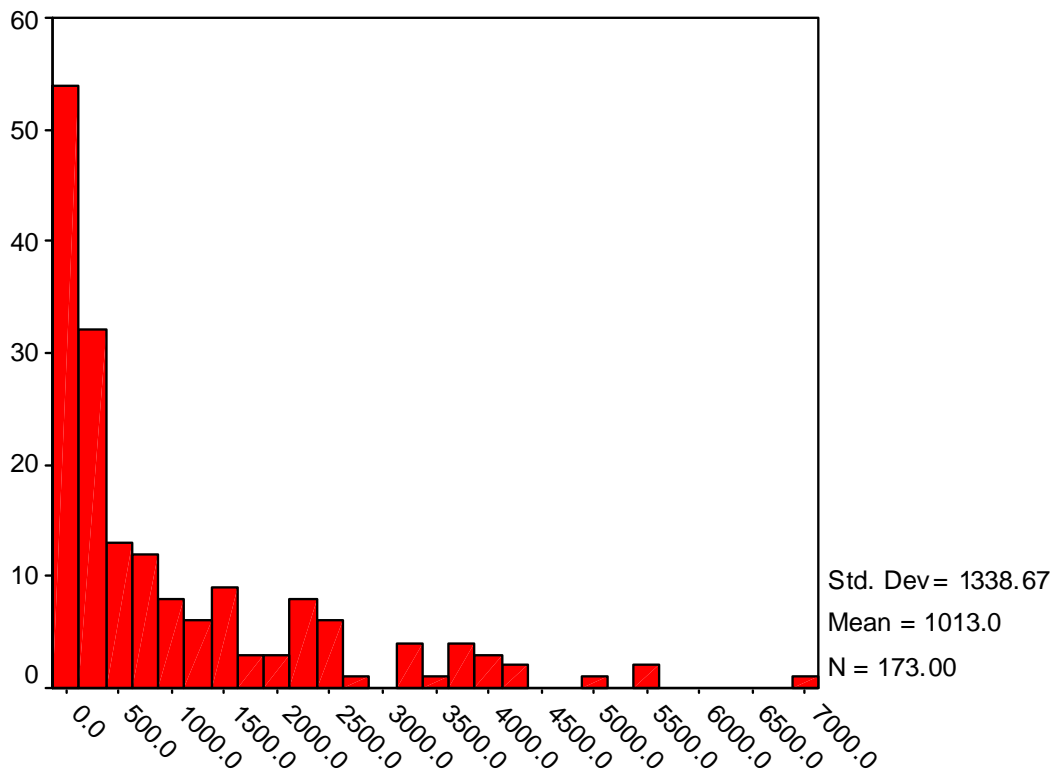
TOTPERS

With a sample of 20 stops, the coefficient of variation of the cluster size means is estimated to be 21%.

Of the 173 stops, 51 or 29.5% represent only 1% of the total boardings (99 or fewer boardings per stop). An additional 62 stops or 36% account for another 13.7% of the boardings (100 to fewer than 1000 boardings). The coefficient of variation in cluster size means in the largest group of stops (1000 and over) is 9.7%.

After examining the level of variability between clusters, we have concluded that control over cluster size is required. We recommend the approach of sampling in proportion to the size of the clusters. This will provide the required statistical control over cluster size and is more practicable than adjusting cluster size by combining/attaching clusters

Parking Lot Stratum

A list of 159 parking lots in the downtown area was also obtained by Metro. This data includes the maximum occupancy of the lots by AM and PM periods.

The size of lots based upon occupancy is quite variable. For the PM occupancy, the coefficient of variation of the mean based on a sample of 20 lots would be 24%. In the case of lots the natural clustering has to be accepted as little can be done to equalize the size of clusters. Again, the CV is borderline and we recommend the lots be selected in proportion to a measure of size.

Parking Meter Stratum

The parking meters in the downtown area have been grouped by block into 86 clusters. The size of these clusters, in terms of the number of meters per cluster, is much more uniform than the clusters of the previous two strata. Even a sample as small as 10 blocks would provide adequate control over cluster size variation. The coefficient of variation of mean block size for a sample of 10 blocks would be 17%. However, it would probably be relatively easy to sample a larger number of blocks. Although these clusters could be selected with equal probability, we recommend maintaining a consistent approach by sampling in proportion to size.

Proposed Sampling Method

The sampling method we propose is to select the first stage in proportion to the measure of size. The sampling fractions for the second stage are adjusted so that sampling provides an equal chance of selection for each

individual. Thus, an equal number of elements is sampled from each of the primary units. The following table gives an example of the idea.

Cluster Measure of Size	First Stage Selection Probability	Second Stage Selection Probability	Overall Selection Probability
10	10/1110	10/10	10/1110
100	100/1110	10/100	10/1110
1000	1000/1110	10/1000	10/1110

Again, note that an equal number of individuals are sampled from each cluster in the second stage of sampling.

For this design the estimated mean is,

$$\hat{\mu}_{pps} = \frac{1}{n}\sum_{i=1}^{n} \bar{y}_i$$

where

$$\bar{y}_i$$

is the mean of the nth cluster and the sample consists of n out of N clusters.

Where the actual number of responses is the same in each cluster as expected, this is also the simple mean of all the elements.

The estimated variance for this design is,

$$\hat{V}(\hat{\mu}_{pps}) = (1-f)\frac{1}{n(n-1)}\sum_{i=1}^{n}(\bar{y}_- - \hat{\mu}_{pps})^2$$

where f is the sampling fraction n/N of clusters.

Notice that the variance is calculated from the differences between means of clusters.

The second stage sampling procedures are discussed below in *Sub-Sampling Clusters*.

Sample Sizes

The variance of the estimated means and proportions from these cluster samples are computed from the variance among means of clusters (stops). This clustering of the sample will reduce the precision of the statistics computed from the sample if the characteristics measured within clusters tend to be correlated. If they are not, a cluster sample offers the same precision as a simple random sample of the whole population.

In estimating a parameter based on a proportion of 0.5, a sample size of 400 would provide a 95% confidence interval of plus or minus 5 percentage points(45% to 55%). The same would be true for a cluster sample involving a total of 400 responses (say 20 clusters of 20 responses) if there is no correlation of responses within clusters.

To establish a bound on the error in the case where there is a correlation within clusters, one needs to know the magnitude of the correlation (or previous estimates of the variances between and within clusters). Such estimates are not available. In the absence of this information on variances, we can only give general guidelines.

The stronger the correlation, the more important it is to have more clusters in the sample. Therefore, it would be prudent to design the sample to include as many clusters as possible within the budget.

The following table gives an example of the confidence intervals expected for a proportion of 0.50 with different cluster designs. A moderate correlation (intraclass correlation of 0.12) is assumed. The cluster designs are compared to a simple random sample of 400.

A cluster sample of 20 responses in each of 20 clusters would give an estimate with twice the error range. To reduce this to somewhere near that of a simple random sample, the number of clusters would have to be increased to 50. The total sample size could be limited (to reduce cost) by reducing the number of responses per cluster to 15.

Example of error ranges (confidence intervals) for cluster samples of proportions.

Clusters	Surveys Per cluster	Total Sample	Half Confidence interval
0		400	5.0%
20	20	400	10.0%
30	15	450	8.0%
40	15	600	6.5%
50	15	750	5.3%

These estimates of precision ignore the large non-response that is expected from this survey. As a practical matter, I would think that a sample of 20 to 30 clusters would be adequate for this project.

To design the most cost effective sample size strategy (number of clusters vs. number of responses per cluster) requires knowledge of the costs associated with sampling an element and a cluster, costs which are also not known. However, in the downtown area clusters are relatively close, so that the costs of sampling a cluster is relatively low. The method of sub-sampling the clusters will affect these costs.

Sub-sampling Clusters

Sub-sampling needs to provide an equal chance of selection for every element of the cluster but does not have to be a simple random sample.

Bus Rider Clusters

If 15 completed surveys are needed from each stop and the response rate is expected to be 10%, 150 surveys need to be distributed to each stop sampled. A systematic distribution (every nth passenger) is probably not feasible nor efficient. It would seem rude to solicit some waiting passengers for participation in the survey and ignore others, and it would also require fieldworkers to be at the stop for the entire 2 hours. An alternative would be to pick a random time period during which the requisite number of passengers are expected to be boarding and solicit participation in the survey from all of those passengers.

From the *Ons* data, find the average number of boardings per 15-minute interval for a stop. From this determine the number of sequential intervals expected to distribute the surveys. If, say, one fifteen minute interval is sufficient, then there would be 12 potential times to sample this stop. Pick one with equal probability. The day on which this sample is taken would also be selected randomly from all of the sampling days.

Parking Lot Clusters

There are two options for sub-sampling parking lots. The first option is a systematic sample of every nth vehicle. This approach gives the field personnel the potential to make contact with the drivers. This contact can have a very real impact on increasing the response rate. On the other hand, it may not be feasible to make contact during entry/exit to the lots, and this would require field personnel to be at the lot during the whole sampling period (day 3-6pm). Also, it may not be worth the cost to increase response rate in this stratum if response rates in the others remain low.

A simpler alternative is to randomly select a time and systematically sample every nth vehicle if this is allowed by the lot owner. Several random times could be selected if needed to distribute the total number required. This approach would have a great economy over the alternative method of sub-sampling.

Metered Parking Clusters

Sub-sampling the blocks of metered parking would be similar to the second method described for lots. Survey forms would be distributed at random days and times to all vehicles parked in the selected clusters until the requisite number of surveys are distributed.

Combining Estimates From Frames

To obtain overall estimates of the variables (opinions on various topics) from these separate transportation strata, the separate estimates need to be combined, using as weights the proportion of the population represented by each stratum.

If not previously estimated, some additional information could be gathered to facilitate estimates of stratum sizes.

1) Parking lots: Need count of the average number of individuals per car per lot. Also need total number of cars per lot counting both the number of permit holders and the number of individual ticket holders per day from the sampled lots.
2) Count the average number of individuals per car using meters and the average number of cars parking at a meter per day.
3) Estimate of the total number of individuals riding buses to the downtown area.

Since strata weights will be estimates themselves, the overall estimates will also contain bias to an unknown degree.

Sampling Procedures for First Stage Selections

The procedure for selecting a proportionate sample for each of the frames discussed is as follows:

1. Determine the clusters.
2. Determine the total number of boardings from the *Ons* file for the sampling period, such as 4pm to 6pm
3. List these in order from low to high number of boardings as shown in the table below
4. Calculate the cumulative number of boardings.
5. Create a selection interval for cluster "I" as the interval between the cumulative number of boardings - - for cluster "I-1" and the cumulative number of boardings for cluster "I"
6. Look up or generate "n" random numbers between 1 and the total number of boardings
7. For each random number select the cluster whose selection interval includes the random number. Repeat to select n different clusters.

The following tables include samples of 30 (buses and lots) and 20 (street meters) obtained by the above process.

Bus Frame

The following table shows the list of bus stops (zones) being used in the order of size as measured by the "ons" data.

This frame excludes layover and tunnel stops as well as 910, 940, 1010, 1020, and 1910. Ons data for zones 315 and 800 were obtained from the Spring Ons file while all of the others were from the Fall Ons file. The following zones were not found in either file: 841, 950, 952, 1060, 1070, 2262.

An actual sample of 30 stops is also shown (indicated with a "1" in the last column). The selected stops are: 20, 60, 180, 280, 310, 315, 320, 340, 370, 390, 430, 450, 490, 500, 538, 558, 570, 590, 624, 660, 670, 682, 690, 720, 1085, 1110, 1180, 1190, 1480, 1920). These were selected in proportion to their total boardings as measured by the "ons" data for 4 to 6pm.

ZONE	Total Boardings	Cumulative Boardings	Selection Interval		Probability of Selection	Sample
615+ 842+ 1431	1	1	0	1	0.00001	
840	2	3	2	3	0.00001	

1450	2	5	4	5	0.00001	
625	4	9	6	9	0.00003	
1330	4	13	10	13	0.00003	
1360	4	17	14	17	0.00003	
1370	5	22	18	22	0.00003	
820	7	29	23	29	0.00005	
1209	8	37	30	37	0.00005	
1215	9	46	38	46	0.00006	
843	10	56	47	56	0.00006	
375	16	72	57	72	0.00010	
1350	18	90	73	90	0.00012	
25	20	110	91	110	0.00013	
1458	20	130	111	130	0.00013	
1630	20	150	131	150	0.00013	
1451	21	171	151	171	0.00014	
868	24	195	172	195	0.00015	
1280	30	225	196	225	0.00019	
821	31	256	226	256	0.00020	
810	36	292	257	292	0.00023	
870	36	328	293	328	0.00023	
1130	36	364	329	364	0.00023	
1915	38	402	365	402	0.00025	
1260	39	441	403	441	0.00025	
98141	41	482	442	482	0.00026	
254	42	524	483	524	0.00027	
1250	42	566	525	566	0.00027	
623	45	611	567	611	0.00029	
1415	47	658	612	658	0.00030	
520	48	706	659	706	0.00031	
1400	56	762	707	762	0.00036	
258	57	819	763	819	0.00037	
790	61	880	820	880	0.00039	
1340	66	946	881	946	0.00043	
1600	70	1016	947	1016	0.00045	
677	71	1087	1017	1087	0.00046	
1420	71	1158	1088	1158	0.00046	
98140	75	1233	1159	1233	0.00048	
1881	78	1311	1234	1311	0.00050	
1030	79	1390	1312	1390	0.00051	
98797	81	1471	1391	1471	0.00052	
1550	83	1554	1472	1554	0.00054	
800	86	1640	1555	1640	0.00055	
1315	95	1735	1641	1735	0.00061	
1425	98	1833	1736	1833	0.00063	
880	115	1948	1834	1948	0.00074	
1880	116	2064	1949	2064	0.00075	
110	126	2190	2065	2190	0.00081	
10	145	2335	2191	2335	0.00094	
622	153	2488	2336	2488	0.00099	
18440	175	2663	2489	2663	0.00113	
260	185	2848	2664	2848	0.00119	
20	191	3039	2849	3039	0.00123	1
740	191	3230	3040	3230	0.00123	
220	192	3422	3231	3422	0.00124	
982	197	3619	3423	3619	0.00127	
1270	206	3825	3620	3825	0.00133	
1580	226	4051	3826	4051	0.00146	
1620	229	4280	4052	4280	0.00148	
7440	254	4534	4281	4534	0.00164	
1239	263	4797	4535	4797	0.00170	
1570	267	5064	4798	5064	0.00172	
605	271	5335	5065	5335	0.00175	
1500	281	5616	5336	5616	0.00181	

628	284	5900	5617	5900	0.00183	
1540	288	6188	5901	6188	0.00186	
230	294	6482	6189	6482	0.00190	
750	301	6783	6483	6783	0.00194	
18420	309	7092	6784	7092	0.00199	
1490	327	7419	7093	7419	0.00211	
960	335	7754	7420	7754	0.00216	
7450	340	8094	7755	8094	0.00219	
1590	366	8460	8095	8460	0.00236	
515	378	8838	8461	8838	0.00244	
1920	401	9239	8839	9239	0.00259	1
1710	409	9648	9240	9648	0.00264	
125	411	10059	9649	10059	0.00265	
730	421	10480	10060	10480	0.00272	
250	426	10906	10481	10906	0.00275	
1510	435	11341	10907	11341	0.00281	
640	447	11788	11342	11788	0.00288	
1120	466	12254	11789	12254	0.00301	
1890	473	12727	12255	12727	0.00305	
775	493	13220	12728	13220	0.00318	
1040	504	13724	13221	13724	0.00325	
631	622	14346	13725	14346	0.00401	
1610	679	15025	14347	15025	0.00438	
420	689	15714	15026	15714	0.00444	
1111	689	16403	15715	16403	0.00444	
180	704	17107	16404	17107	0.00454	1
970	718	17825	17108	17825	0.00463	
40	720	18545	17826	18545	0.00464	
1560	737	19282	18546	19282	0.00475	
1230	765	20047	19283	20047	0.00493	
1085	770	20817	20048	20817	0.00497	1
130	774	21591	20818	21591	0.00499	
150	815	22406	21592	22406	0.00526	
400	879	23285	22407	23285	0.00567	
1530	965	24250	23286	24250	0.00622	
1480	1017	25267	24251	25267	0.00656	1
1160	1036	26303	25268	26303	0.00668	
1050	1076	27379	26304	27379	0.00694	
500	1111	28490	27380	28490	0.00717	1
270	1208	29698	28491	29698	0.00779	
200	1212	30910	29699	30910	0.00782	
170	1217	32127	30911	32127	0.00785	
370	1248	33375	32128	33375	0.00805	1
710	1250	34625	33376	34625	0.00806	
11130	1260	35885	34626	35885	0.00813	
690	1298	37183	35886	37183	0.00837	1
70	1343	38526	37184	38526	0.00866	
648	1500	40026	38527	40026	0.00968	
600	1541	41567	40027	41567	0.00994	
380	1554	43121	41568	43121	0.01002	
1110	1594	44715	43122	44715	0.01028	1
670	1600	46315	44716	46315	0.01032	1
390	1637	47952	46316	47952	0.01056	1
620	1698	49650	47953	49650	0.01095	
60	1700	51350	49651	51350	0.01097	1
760	1724	53074	51351	53074	0.01112	
1471	1724	54798	53075	54798	0.01112	
531	1894	56692	54799	56692	0.01222	
558	1944	58636	56693	58636	0.01254	1
490	2174	60810	58637	60810	0.01402	1
590	2213	63023	60811	63023	0.01428	1
90	2353	65376	63024	65376	0.01518	
860	2379	67755	65377	67755	0.01535	

468	2388	70143	67756	70143	0.01540	
538	2431	72574	70144	72574	0.01568	1
190	2460	75034	72575	75034	0.01587	
720	2499	77533	75035	77533	0.01612	1
624	2584	80117	77534	80117	0.01667	1
548	2631	82748	80118	82748	0.01697	
660	2640	85388	82749	85388	0.01703	1
280	2665	88053	85389	88053	0.01719	1
360	2721	90774	88054	90774	0.01755	
1190	2760	93534	90775	93534	0.01780	1
480	2833	96367	93535	96367	0.01827	
320	3070	99437	96368	99437	0.01980	1
621	3638	103075	99438	103075	0.02347	
430	3655	106730	103076	106730	0.02358	1
1180	3723	110453	106731	110453	0.02402	1
330	3758	114211	110454	114211	0.02424	
340	4218	118429	114212	118429	0.02721	1
300	4235	122664	118430	122664	0.02732	
682	4282	126946	122665	126946	0.02762	1
570	4301	131247	126947	131247	0.02774	1
578	4602	135849	131248	135849	0.02969	
310	6036	141885	135850	141885	0.03894	1
450	6128	148013	141886	148013	0.03953	1
315	7009	155022	148014	155022	0.04521	1

Parking Lot Frame

The following table shows a sample selection of 30 parking lots in proportion to the maximum occupancy (max_oc).

UNIQUE_ID	MAX_OC	Cum Oc	Selection Interval		Sample
SEA-73-3026-4	2	2	1	2	
SEA-73-2014-7	4	6	3	6	
SEA-73-3031-6	4	10	7	10	
SEA-73-2014-4	5	15	11	15	
SEA-73-2019-5	5	20	16	20	
SEA-82-2005-2	6	26	21	26	
SEA-92-1001-4	6	32	27	32	
SEA-92-2018-2	6	38	33	38	
SEA-73-3024-3	7	45	39	45	
SEA-73-3025-1	7	52	46	52	
SEA-81.00-1000-	8	60	53	60	
SEA-82-1001-2	8	68	61	68	
SEA-92-2018-1	11	79	69	79	
SEA-92-1004-2	12	91	80	91	
SEA-92-2002-1	12	103	92	103	
SEA-73-2021-4	13	116	104	116	
SEA-92-1005-2	13	129	117	129	
SEA-92-2002-3	13	142	130	142	
SEA-82-1005-2	14	156	143	156	
SEA-83-2001-2	14	170	157	170	
SEA-73-3024-2	15	185	171	185	
SEA-82-2005-3	15	200	186	200	
SEA-73-2021-3	16	216	201	216	
SEA-73-2024-1	16	232	217	232	
SEA-92-2016-1	16	248	233	248	

SEA-82-1007-5	18	266	249	266	
SEA-81-2026-1	20	286	267	286	
SEA-92-1006-2	20	306	287	306	
SEA-81.00-1000-	21	327	307	327	
SEA-82-3008-1	23	350	328	350	
SEA-92-1004-1	23	373	351	373	
SEA-80.02-1000-	24	397	374	397	
SEA-92-1003-4	24	421	398	421	
SEA-73-2021-1	26	447	422	447	
SEA-80.02-1000-	26	473	448	473	
SEA-81-2004-2	26	499	474	499	1
SEA-73-2014-3	27	526	500	526	
SEA-73-2023-1	27	553	527	553	
SEA-73-3032-2	27	580	554	580	
SEA-81-2038-2	27	607	581	607	
SEA-81-2038-4	27	634	608	634	
SEA-81-1009-1	28	662	635	662	
SEA-81-1021-2	28	690	663	690	
SEA-92-1004-4	28	718	691	718	
SEA-73-3033-1	36	754	719	754	
SEA-81-2028-1	37	791	755	791	
SEA-92-1001-3	40	831	792	831	
SEA-92-1004-3	40	871	832	871	
SEA-81-2038-3	41	912	872	912	
SEA-73-2019-4	44	956	913	956	
SEA-81-2030-5	44	1000	957	1000	
SEA-92-1001-2	46	1046	1001	1046	
SEA-83-2003-2	48	1094	1047	1094	
SEA-92-1005-3	48	1142	1095	1142	1
SEA-73-2019-1	49	1191	1143	1191	
SEA-72-1064-3	52	1243	1192	1243	
SEA-73-3032-1	52	1295	1244	1295	
SEA-81-2010-1	52	1347	1296	1347	
SEA-81-2030-4	52	1399	1348	1399	
SEA-81-2030-3	53	1452	1400	1452	
SEA-73-3031-1	54	1506	1453	1506	
SEA-73-2018-1	55	1561	1507	1561	
SEA-72-1064-1	56	1617	1562	1617	
SEA-92-1003-3	56	1673	1618	1673	
SEA-92-1003-2	57	1730	1674	1730	
SEA-73-2019-3	58	1788	1731	1788	1
SEA-92-1002-1	58	1846	1789	1846	
SEA-73-2020-2	59	1905	1847	1905	
SEA-73-2021-2	59	1964	1906	1964	
SEA-82-1000-4	62	2026	1965	2026	
SEA-81-2015-1	63	2089	2027	2089	
SEA-92-1006-1	63	2152	2090	2152	
SEA-82-1000-3	64	2216	2153	2216	
SEA-92-1001-1	66	2282	2217	2282	
SEA-81-2017-1	67	2349	2283	2349	

SEA-82-2005-4	67	2416	2350	2416	
SEA-82-3008-3	67	2483	2417	2483	
SEA-92-1003-1	75	2558	2484	2558	1
SEA-81-1021-1	76	2634	2559	2634	
SEA-82-3007-2	76	2710	2635	2710	
SEA-73-2019-2	77	2787	2711	2787	
SEA-73-2022-1	80	2867	2788	2867	
SEA-81-2028-2	80	2947	2868	2947	
SEA-81-2003-1	83	3030	2948	3030	
SEA-73-2022-3	88	3118	3031	3118	
SEA-81-1006-1	91	3209	3119	3209	
SEA-73-2014-1	92	3301	3210	3301	
SEA-73-3031-2	92	3393	3302	3393	
SEA-92-2002-2	92	3485	3394	3485	
SEA-82-1000-1	95	3580	3486	3580	
SEA-81-2022-2	98	3678	3581	3678	1
SEA-92-1005-1	100	3778	3679	3778	
SEA-82-1001-1	109	3887	3779	3887	1
SEA-81-2027-1	110	3997	3888	3997	1
SEA-81-2019-2	111	4108	3998	4108	
SEA-81-2013-1	116	4224	4109	4224	1
SEA-73-3024-1	120	4344	4225	4344	
SEA-82-3008-2	120	4464	4345	4464	
SEA-81-1032-1	155	4619	4465	4619	
SEA-82-3007-1	156	4775	4620	4775	
SEA-85-3005-1	159	4934	4776	4934	
SEA-82-1003-1	160	5094	4935	5094	
SEA-73-2018-2	163	5257	5095	5257	1
SEA-72-1067-1	167	5424	5258	5424	
SEA-81-2008-1	169	5593	5425	5593	
SEA-82-3006-1	179	5772	5594	5772	1
SEA-92-1002-2	180	5952	5773	5952	
SEA-82-2005-1	198	6150	5953	6150	
SEA-73-3032-4	200	6350	6151	6350	
SEA-81-2015-2	200	6550	6351	6550	
SEA-81-1052-1	202	6752	6551	6752	1
SEA-81-2030-1	206	6958	6753	6958	1
SEA-73-3026-1	213	7171	6959	7171	
SEA-81-2022-1	213	7384	7172	7384	
SEA-81-1008-2	215	7599	7385	7599	
SEA-81-2005-1	215	7814	7600	7814	
SEA-81-2030-2	217	8031	7815	8031	
SEA-82-1012-1	225	8256	8032	8256	
SEA-81-2034-1	230	8486	8257	8486	
SEA-81-1052-2	233	8719	8487	8719	
SEA-82-1011-1	236	8955	8720	8955	
SEA-72-1063-1	250	9205	8956	9205	
SEA-81-1055-1	255	9460	9206	9460	
SEA-82-1004-1	256	9716	9461	9716	
SEA-81-2001-1	265	9981	9717	9981	

SEA-73-2016-1	277	10258	9982	10258	
SEA-82-1005-3	302	10560	10259	10560	1
SEA-73-3031-5	312	10872	10561	10872	
SEA-82-1013-1	313	11185	10873	11185	
SEA-73-2022-2	318	11503	11186	11503	
SEA-81-2004-1	333	11836	11504	11836	
SEA-81-1042-1	350	12186	11837	12186	
SEA-72-1067-2	369	12555	12187	12555	
SEA-81-1032-2	399	12954	12556	12954	1
SEA-82-1005-1	406	13360	12955	13360	
SEA-82-1014-1	429	13789	13361	13789	1
SEA-81-2011-1	430	14219	13790	14219	
SEA-81-2010-2	432	14651	14220	14651	1
SEA-81-1053-1	435	15086	14652	15086	
SEA-81-2024-1	462	15548	15087	15548	1
SEA-81-2025-1	493	16041	15549	16041	1
SEA-73-3026-2	533	16574	16042	16574	
SEA-81-2038-1	549	17123	16575	17123	1
SEA-85-1008-1	562	17685	17124	17685	
SEA-73-2020-1	566	18251	17686	18251	
SEA-85-1010-2	571	18822	18252	18822	1
SEA-81-2021-1	606	19428	18823	19428	
SEA-81-2012-1	645	20073	19429	20073	1
SEA-85-1009-1	664	20737	20074	20737	
SEA-81-2023-1	668	21405	20738	21405	1
SEA-81-2019-1	700	22105	21406	22105	1
SEA-81-2031-1	705	22810	22106	22810	1
SEA-82-1002-1	732	23542	22811	23542	1
SEA-81-2016-1	815	24357	23543	24357	
SEA-82-1008-2	819	25176	24358	25176	1
SEA-81-2003-2	844	26020	25177	26020	1
SEA-82-1015-1	911	26931	26021	26931	1
SEA-82-1006-5	954	27885	26932	27885	1
SEA-82-1013-2	981	28866	27886	28866	1

On-Street Parking Frame

The following is a sample 20 of on-street - parking clusters in proportion to the number of meters per cluster.

Cluster	Meters	Cum Meters	Sampling Interval		Sample
1	16	16	1	16	
2	9	25	17	25	
3	8	33	26	33	
4	9	42	34	42	
5	12	54	43	54	
6	42	96	55	96	
7	11	107	97	107	
8	13	120	108	120	1
9	23	143	121	143	
10	27	170	144	170	1
11	10	180	171	180	
12	7	187	181	187	1

13	12	199	188	199	
14	2	201	200	201	
15	22	223	202	223	
15.5	13	236	224	236	
16	27	263	237	263	
17	17	280	264	280	
18	19	299	281	299	
18	19	318	300	318	
19	3	321	319	321	
20	13	334	322	334	
21	24	358	335	358	
22	37	395	359	395	
23	27	422	396	422	
24	15	437	423	437	1
25	13	450	438	450	
26	25	475	451	475	
27	15	490	476	490	
28	43	533	491	533	1
29	6	539	534	539	
30	34	573	540	573	
31	26	599	574	599	
32	20	619	600	619	
33	8	627	620	627	
34	29	656	628	656	
35	19	675	657	675	1
36	7	682	676	682	
37	21	703	683	703	
38	16	719	704	719	
39	13	732	720	732	1
40	38	770	733	770	1
41	23	793	771	793	1
42	17	810	794	810	
43	9	819	811	819	
44	19	838	820	838	1
45	18	856	839	856	
46	8	864	857	864	
47	17	881	865	881	
48	20	901	882	901	
49	15	916	902	916	1
50	15	931	917	931	
51	32	963	932	963	
52	10	973	964	973	
53	14	987	974	987	
54	7	994	988	994	
55	18	1012	995	1012	1
56	2	1014	1013	1014	
57	7	1021	1015	1021	
58	22	1043	1022	1043	
59	4	1047	1044	1047	1
60	17	1064	1048	1064	
61	10	1074	1065	1074	

62	5	1079	1075	1079	
63	13	1092	1080	1092	
64	23	1115	1093	1115	
65	17	1132	1116	1132	
66	16	1148	1133	1148	
67	2	1150	1149	1150	
68	10	1160	1151	1160	
69	6	1166	1161	1166	
70	22	1188	1167	1188	
70.5	12	1200	1189	1200	
71	32	1232	1201	1232	1
72	29	1261	1233	1261	
73	24	1285	1262	1285	
74	22	1307	1286	1307	
74.5	11	1318	1308	1318	
75	29	1347	1319	1347	1
76	21	1368	1348	1368	1
77	24	1392	1369	1392	
78	35	1427	1393	1427	1
79	30	1457	1428	1457	1
80	35	1492	1458	1492	1
81	22	1514	1493	1514	1
82	17	1531	1515	1531	
84	31	1562	1532	1562	

Legend

- TSP Readers
- Bus Stops Within Subject Area
- Other Area Bus Stops
- Subject Area

October 28, 2004   E://Seattle/cbd_reader_locations.mxd
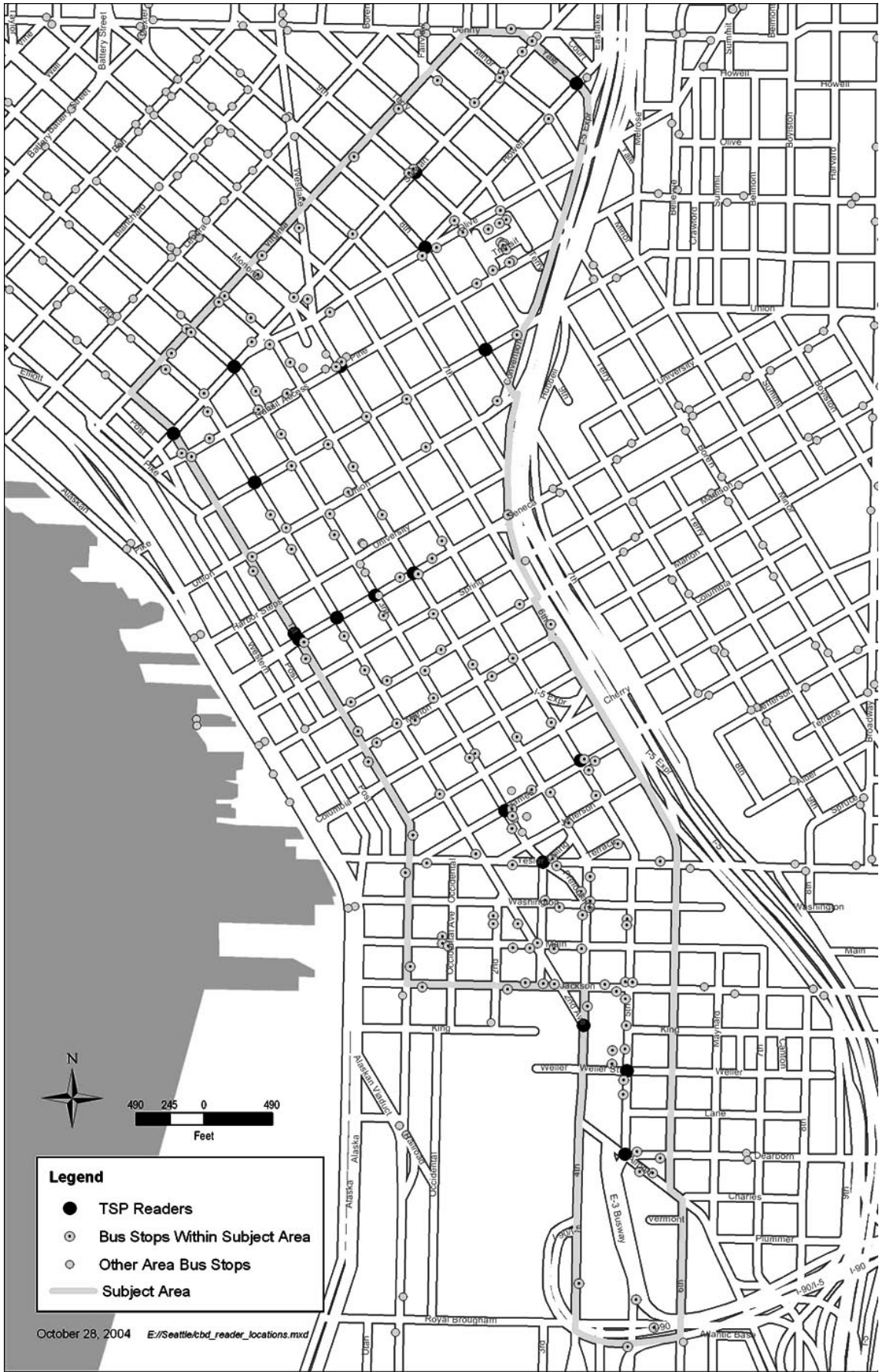
Attachment C

<div align="center">

FIELDING SCHEDULE

</div>

	2 0 0 5 J F M A M J J A S O N D	2 0 0 6 J F M A M J J A S O N D	2 0 0 7 J F M A M J J A S O N D	2 0 0 8 J F M A M J J A S O N D
Baseline Surveys				
Customer Perceptions	X X X	X X X		X X X
Informal Interviews	X X X X	X X		